

ABSTRACT

Methods and apparatus for improving vision incorporate the effects of biodynamical and biomechanical (biological) responses of the eye. The eye produces a biological response to trauma, such as a LASIK keratectomy or other necessary traumatic procedure in preparation for refractive surgery. By observing the biological response, a prospective treatment to correct higher order aberrations is adjusted to compensate for the biological effects. An improved photorefractive surgery system incorporates one or more suitable diagnostic devices that provide biological response information in such a manner that the patient need not change position from that assumed for the surgical procedure.